

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03/052 NUT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/006957	International filing date (<i>day/month/year</i>) 26.06.2004	Priority date (<i>day/month/year</i>) 03.07.2003
International Patent Classification (IPC) or national classification and IPC A23L1/236, C07K5/06, C07D291/06		
Applicant NUTRINOVA NUTRITION SPECIALTIES & FOOD INGREDIENTS GMBH		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 6 sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <div style="margin-left: 20px;"> a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows: <div style="margin-left: 20px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. </div> </div> <div style="margin-left: 20px;"> b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) </div> <div style="margin-left: 20px;"> _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). </div>
4.	This report contains indications relating to the following items: <div style="margin-left: 20px;"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application </div>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/EP2004/006957

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-10 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-6 (in part) _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 6 (in part)-14 received by this Authority on 03.05.2005 with
- nos.* _____ received by this Authority on telefax
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-14	YES
	Claims		NO
Inventive step (IS)	Claims	1-14	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-14	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1. The present report refers to the following documents:			
D1: WO 99/12954 A (NUTRASWEET CO) 18 March 1999 (1999-03-18)			
D2: US-A-5 827 562 (VAN SOOLINGEN JACOB ET AL) 27 October 1998 (1998-10-27)			
D3: ES-A-8 604 766 (PALOMO COLL ALBERTO) 1 August 1986 (1986-08-01)			
D4: US 2001/006694 A1 (FRY JOHN ET AL) 5 July 2001 (2001-07-05)			
D5: HOEK A C ET AL: "IMPROVED POWDER MIX QUALITY WITH TWINSWEET" WORLD REVIEW OF NUTRITION AND DIETETICS, KARGER, MUENCHEN, DE, Vol. 85, 1999, pages 133-139, XP000957747 ISSN: 0084-2230			
D6: EP-A-1 219 182 (NUTRINOVA NUTRITION SPECIALTIE) 3 July 2002 (2002-07-03)			
D7: EP-A-0 155 634 (HOECHST AG) 25 September 1985 (1985-09-25)			
D8: WO 99/64444 A (GROENEVELD CHRISTIAAN; HOLLAND SWEETENER CO (NL)) 16 December 1999 (1999-12-16).			

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The relevant passages are those cited in the search report.

2. The subject matter of the present application relates to a synthesis of a salt from aspartame and acesulfame-H (claims 1-11), a salt obtained from aspartame and acesulfame-H (claims 12 and 13) and the use thereof (claim 14).

3. Synthesis (claims 1-11)

- 3.1 Novelty

Document D1 discloses the reaction of neotame with acesulfame-H in different solvents not disclosed in claim 1 (page 6, lines 5-19).

Documents D2 and D4, D6 and D8 disclose the reaction of acesulfame-K in an acid medium with aspartame/aspartame derivatives.

In document 3 acesulfame-H is converted into MeOH.

Document D7 describes the synthesis of acesulfame-H into the claimed LM, the conversion with the base into acesulfame-K then being carried out in an aqueous phase.

Consequently, the method according to claims 1-11 is not disclosed. Claims 1-11 therefore satisfy the requirements of PCT Article 33(2).

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

3.2 Inventive step

Document D6 expressly refers to the synthesis according to document D7 to disclose acesulfame-H which is then converted in an aqueous phase with basic AS. A combination with documents D8 or D7 with document D1 would likewise not lead to the claimed synthesis, whose aim is the production of a stable sweetener salt. Claims 1-11 meet the requirements of PCT Article 33(3).

4. Salt (claims 12 and 13)

4.1 Novelty

Document D2 contains precise data on the stability of the salt which demonstrate that the salt produced according to document D2 has a DKP content of 0.01 % or more even before heating. This content will remain after heating. The compounds disclosed in document D2 therefore present a breakdown rate far exceeding the breakdown of less than 0.005% DKP after heating, as claimed by the invention. Consequently, the subject matter of claims 12 and 13 can be considered novel and hence claims 12 and 13 satisfy the requirements of PCT Article 33(2).

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4.2	Inventive step
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	<p>The claimed invention makes available an APMHAcE which is more stable than that of the prior art document D2, owing to the lower breakdown of the product during heating. Consequently, claims 12 and 13 meet the requirements of PCT Article 33(3).</p>
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5.	Use (claim 14)
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	<p>Point 4 applies analogously to the use of the salt in food, beverages, pharmaceuticals and cosmetics. The requirements of PCT Article 33(2) and (3) are satisfied.</p>
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6.	The subject matter of claims 1-14 meets the requirements of PCT Article 33(4).
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